Facilitators and Barriers to Employment Among Veterans with Spinal Cord Injury Receiving 12 Months of Evidence-Based Supported Employment Services

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Background: Return to work is associated with positive rehabilitation outcomes for persons with spinal cord injury (SCI); however, more research is needed on vocational support for persons with disabilities seeking employment. **Objective:** The association between facilitators and barriers of employment and employment outcome was examined among Veterans with SCI who participated in an evidence-based supported employment (EBSE) program. **Methods:** Using a mixed-methods, nested case-control design, data on facilitators and barriers to employment were extracted from qualitative interviews and quantitative measures administered in person to 34 Veterans with SCI who completed 12 months of an EBSE program. Participants who did (case) and did not (control) obtain competitive employment were matched on time since SCI. Facilitators and barriers to employment were compared between the groups. **Results:** Self-report measures administered at baseline were examined; there were no statistically significant factors that predicted employment outcomes after 12 months of EBSE program participation. Qualitative interview data revealed program-specific facilitators and Veteran characteristics that were associated with employment outcomes. **Conclusions:** Qualitative data illustrate how the integration of the vocational rehabilitation specialist on the medical team is helpful for addressing identified disability-specific barriers, including practical matters such as transportation and caregiving schedules, to facilitate employment outcomes. **Key words:** *spinal cord injury, supported employment, Veterans, vocational rehabilitation*

A number of facilitators and barriers are associated with obtaining employment after spinal cord injury (SCI). Identified barriers include transportation, health complications related to SCI, perceived discrimination in the work environment, lack of private insurance coverage, and loss of financial benefits.[1-4] Predictors of employment include being male, having higher education, having higher motivation, being younger at the time of SCI, having lived for more years with SCI, and having been employed before the SCI.[2,3,5] Demographic and injury variables only explain 30% of variance in employment[2]; therefore, more research on facilitators and barriers to employment is needed.

Our objective was to determine how facilitators and barriers differ among Veterans with SCI participating in an evidence-based supported employment (EBSE) program who either obtained or did not obtain competitive employment (CE) in the first 12 months of program participation. EBSE is an integrated approach for assisting people to obtain and maintain community-based CE in their chosen field.[6] The model has been used effectively in individuals with mental health issues[6] and individuals with SCI.[7] We used quantitative measures and qualitative interview data from an ongoing mixed-methods, longitudinal study that implemented EBSE in 7 sites to identify (a) the facilitators and barriers to employment and (b)

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Top Spinal Cord Inj Rehabil 2015;21(1):20–30

www.scijournal.com

doi: 10.1310/sci2101-20

how facilitators and barriers varied by group at baseline and during the first 12 months of program participation.

Methods

Participants

With institutional review board approval, data were collected from Veterans with SCI who were enrolled in a 2-year program of EBSE at 7 geographically diverse study sites in the United States. Participants who did (case) and did not (control) obtain CE during the first 12 months of the study were matched by time since SCI (±3 years), a variable that was correlated with employment after SCI.[8] Years and level of education are associated with employment and were considered in the analysis, but they resulted in little variation between groups because of the small sample size. Thirty-four participants were matched in this nested case-control design.

Procedures

Quantitative measures were collected in person at baseline with periodic follow-up visits. For quantitative analyses, baseline data were utilized. Employment was the only quantitative item that was sensitive to time; it was assessed through the 12-month period. Qualitative interviews were conducted bi-annually using an open-ended, semi-structured format. Qualitative interview data from the 34 Veterans during the first 12 months of participation in EBSE were analyzed. Interviews were digitally audio-recorded with the Veterans' permission and lasted approximately 1 hour. Remuneration was offered to participants for completion of measures and interviews.

Measures

Survey and medical chart data assessed sociodemographic factors, that included time since SCI, and medical and psychiatric co-morbidities, employment history, and VA and Social Security benefits. In addition, 4 baseline measures were used to inform quantitative analyses.

A questionnaire assessing perceptions of barriers and supports to gaining employment was adapted from a previous study[9] with permission from colleagues at Virginia Commonwealth University and was expanded for this study. Respondents were asked to identify the effect of 25 items on their ability to gain employment. Examples of items include motivation level, transportation, and education. Respondents rated each item using a 7-point Likert scale ranging from *hurt a lot* (1) to *helped a lot* (7). To facilitate analysis, responses were grouped into 3 categories: hurt a lot, hurt some, and hurt a little were grouped as "barrier"; the neutral response remained the same; and helped a lot, helped some, and helped a little were grouped as "facilitator." Published reliability and validity data are not available for this questionnaire.

The Satisfaction with Life Scale (SWLS) was used to assess whether higher life satisfaction at baseline served as a facilitator to employment. This 5-item self-report instrument assesses an individual's global judgment of satisfaction with life.[10] Items are assessed via a 7-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (7), with the overall score ranging from 5 to 35. Scores from 15 to 19 indicate slightly dissatisfied, 20 indicates neutrality, and scores from 21 to 25 indicate slightly satisfied. The published coefficient alpha is 0.87, and the test-retest reliability coefficient ranges from .50 at 10 weeks to .83 at 2 weeks.[10]

The Craig Handicap Assessment and Reporting Technique (CHART) is a 32-item instrument assessing the World Health Organization (WHO) dimensions of handicap.[11] The CHART is comprised of 6 domains: physical independence, cognitive independence, mobility, occupation, social integration, and economic self-sufficiency. A score of 100 in a domain indicates no handicap. The published test-retest coefficients for the 6 domains range from 0.80 to 0.95.[12]

The Functional Independence Measure (FIM) is an 18-item instrument that evaluates the degree of disability and burden of care.[13] Independence is assessed through functional skills such as dressing, eating, mobility, and social interaction. A clinician ranks the motor and

cognitive skills on a scale of 1 (*total assistance*) to 7 (*complete independence*).[13] The published interrater reliability kappa coefficients ranged from 0.53 (memory) to 0.66 (stair climbing) in a sample of inpatients at medical rehabilitation facilities.[14]

To document Veterans' experiences in EBSE, a qualitative open-ended, semi-structured interview guide was used. The interview was composed of 24 questions in 4 sections: an injury narrative (5 questions), participation in supported employment (12 questions), social context (3 questions), physical context (3 questions), and one concluding question. In addition, probes were used as needed throughout the interview.

Analysis

Quantitative data were entered into a Microsoft Access database to minimize data entry error.[15] Student's *t* test was used for continuous data and chi-square or Fisher's exact tests were used for categorical data. Barriers and supports data were analyzed using univariate conditional logistic regression after adjustment for matching on time since injury. Odds ratio (OR) and 95% confidence intervals for each variable are presented. Given the sample size limitations, no multivariate conditional logistic regression analyses were performed. Analyses were performed using SAS (Version 9.3; SAS, Inc., Cary, NC), with $P < .05$ considered statistically significant.

Inductive and deductive methods guided the qualitative interview analysis to promote the development of themes. A code book was developed using constructs that were known and that emerged inductively from the data. A qualitative analysis software program, ATLAS.ti (v. 6.2.28), was used to code data using a constant comparative approach.[16,17] Interrater reliability of at least 80% was established, with periodic checks of interrater reliability over time.[18] Triangulation, the combination of several research methodologies in the study of the same phenomenon,[19] occurred through comparison of themes generated from interview data to findings identified from quantitative measures.

Results

Quantitative measures

Demographic characteristics

Case and control participants were matched 1:1 on time since injury (±3 years). Demographic characteristics of both case and control participants at baseline (**Table 1**) indicated that participants were primarily male, approximately 52 years old, and had a similar marital status. Both cases and controls had approximately 13 years of education. The majority of participants were African American. Fewer case participants received VA benefits as compared to controls. No statistically significant differences were observed for demographic characteristics among case and control participants at baseline, indicating that they were well-matched.

Clinical characteristics

Clinical characteristics of the participants at baseline were not statistically significant, but there were some differences (**Table 2**). More control participants had tetraplegia than case participants. The Total FIM scores, CHART physical scores, and mobility and occupational scores were higher for cases than controls. Clinical characteristics of the 2 groups indicate that case participants had better function and physical health than controls.

Facilitators at baseline

There were no statistically significant differences found for perceived employment barriers and supports at baseline; however, there was variation in the distribution of responses (**Table 3** and **Figure 1A** and **B**). Motivational level was more frequently cited as a facilitator among cases than controls. Although, not statistically significant, higher FIM motor subscale scores (Cohen's $d = 0.64$; $P = .07$) and higher SWLS scores (Cohen's $d = 0.66$; $P = .062$) among case participants were positively associated with employment within 12 months of EBSE services (**Table 2**).

When conditional logistic regression modeling was performed to assess the association between facilitators and employment, although non-

Table 1. Demographic characteristics at baseline

Characteristics	Cases ($n = 17$)	Controls ($n = 17$)	Total ($N = 34$)
Age, mean (*SD*) years	51.5 (9.2)	52.1 (9.4)	51.8 (9.2)
Education, mean (*SD*) years	13.5 (2.2)	13.8 (1.9)	13.6 (2.0)
Male, *n* (%)	16 (94.1)	17 (100.0)	33 (97.1)
Race, *n* (%)			
White	6 (35.3)	3 (17.6)	9 (26.5)
African American	8 (47.1)	12 (70.6)	20 (58.8)
Other	3 (17.7)	2 (11.8)	5 (14.7)
Marital status, *n* (%)			
Married	5 (29.4)	7 (41.2)	12 (35.3)
Divorced	9 (52.9)	3 (17.6)	12 (35.3)
Separated	1 (5.9)	1 (5.9)	2 (5.9)
Widowed	–	1 (5.9)	1 (2.9)
Never married	2 (11.8)	5 (29.4)	7 (20.6)
VA benefits, *n* (%)	3 (17.6)	8 (47.1)	11 (32.4)
Service-connected benefits for SCI	1 (5.9)	2 (11.8)	3 (8.8)
SSI, *n* (%)	12 (70.6)	14 (82.4)	26 (76.5)
SSDI, *n* (%)	12 (70.6)	12 (70.6)	24 (70.6)
Prior work history within 5 years, *n* (%)	13 (76.5)	8 (47.1)	21 (61.8)

Note: No statistically significant differences were found between case and control participants at $P < .05$. VA = Veterans Affairs; SCI = spinal cord injury; SSI = Social Security Income; SSDI = Social Security Disability Insurance.

statistically significant, several patterns emerged. Facilitators such as prior work experience (OR, 1.289; 95% CI, 0.47-3.50) and availability of adaptive equipment (OR, 2.00; 95% CI, 0.37-10.92) suggest an increased likelihood of obtained employment.

Barriers at baseline

Both cases and controls viewed their disability or health condition as a barrier (**Table 3**). The ability to use computers and availability of transportation were cited as barriers for controls more frequently than cases. Level of training or education was a barrier for controls, but was a facilitator for cases.

When conditional logistic regression modeling was performed to assess the association between barriers and employment, although non-statistically significant, a similar pattern emerged. Barriers such as energy level (OR, 0.78; 95% CI, 0.35-1.75) and depression (OR, 0.75; 95% CI, 0.17-3.35) suggest a decreased likelihood of obtained employment.

Qualitative interview data

Facilitators to obtaining employment

Two facilitators were identified by both case and control Veterans: the assistance of a vocational rehabilitation specialist (VRS) and the integration of the VRS with the medical team and access to other vocational rehabilitation providers to facilitate employment.

Veterans participating in EBSE are assigned to a VRS who provides one-on-one services to assist in finding employment. Veterans described their VRS taking them out into the community to meet employers, assess workplace accessibility, or investigate potential jobs. The individualized attention of the VRS along with a high level of communication supported the Veterans in their search to obtain employment.

The second most common facilitator cited by both groups was integration between the VRS and the Veteran's medical team and the access to other vocational rehabilitation (VR) service providers. A

Table 2. Clinical characteristics at baseline

Characteristics	Cases ($n = 17$)	Controls ($n = 17$)	Total ($N = 34$)
Cause of injury, *n* (%)			
Motor vehicle collision	5 (29.4)	8 (47.1)	13 (38.2)
Fall	2 (11.8)	2 (11.8)	4 (11.8)
Gunshot wound	1 (5.9)	--	1 (2.9)
Average time since injury, mean (*SD*) years	8.8 (11.0)	8.9 (10.9)	8.9 (10.8)
FIM, mean (*SD*)			
Total	82.2 (34.3)	68.1 (23.8)	75.1 (30.0)
Motor	59.7 (19.7)	46.2 (22.1)	53.0 (21.8)
Cognition	29.5 (21.1)	23.2 (4.4)	26.0 (14.5)
AIS & neurological level, *n* (%)			
High tetraplegia, AIS A, B, C	2 (11.8)	3 (17.6)	5 (14.7)
Low tetraplegia AIS A, B, C	1 (5.9)	2 (11.8)	3 (8.8)
Paraplegia, AIS A, B, C	5 (29.4)	5 (29.4)	10 (29.4)
AIS D/E	9 (52.9)	7 (41.2)	16 (47.1)
Medical history, *n* (%)			
Depression	6 (35.3)	4 (23.5)	10 (29.4)
Neurogenic bladder	8 (47.1)	11 (64.7)	19 (55.9)
Neurogenic bowel	7 (41.2)	10 (58.8)	17 (50.0)
Spasticity/spasm of muscle	7 (41.2)	9 (52.9)	16 (47.1)
Substance abuse	4 (23.5)	3 (17.6)	7 (20.6)
Satisfaction with Life Scale, mean (*SD*)	20.5 (9.2)	15.0 (7.0)	17.7 (8.6)
CHART, mean (*SD*)			
Social Integration	91.1 (13.1)	86.5 (14.9)	88.7 (14.0)
Mobility	83.8 (17.3)	73.8 (22.8)	79.1 (20.3)
Cognitive	95.3 (7.7)	89.8 (14.6)	92.4 (12.1)
Occupation	53.1 (32.6)	42.2 (29.9)	47.5 (31.2)
Physical	90.1 (23.7)	72.5 (30.9)	77.4 (36.5)
Economic Self-Sufficiency	54.4 (44.4)	52.9 (38.4)	53.7 (40.9)

Note: No statistically significant differences were found between case and control participants at $P < .05$. AIS = American Spinal Cord Association Impairment Scale; CHART = Craig Handicap and Reporting Technique; FIM = Functional Independence Measure.

Veteran explained, "[My VRS] has full access to my doctor. They work together as my medical team. I won't have it any other way." The VRS and medical team are able to address physical health issues that may arise during the employment search. The VRS accessed and collaborated with other available employment resources for Veterans on their caseload to maximize outcomes. These may have included services available through the Paralyzed Veterans of America's (PVA) Paving Access for Veterans Employment (PAVE) program, compensated work therapy (CWT), VR services at the hospital, and state VR. Veterans described how their VRS worked with other VR service providers to identify potential employers or address barriers to employment. One case Veteran explained that his job offer came about through his VRS and PVA PAVE counselor who, according to the Veteran, "worked hand-in-hand" to find the place of employment and make the first contact with the employer on his behalf. Veterans described having their VRS accessing other vocational services as a facilitator to finding employment and overcoming barriers.

Barriers to employment

Barriers to employment varied for case and control Veterans, except for lack of transportation. Veterans described the challenge of arriving on time without a vehicle and having to depend on

Table 3. Response rate for barriers and supports questionnaire ($N = 34$)

Item	Barrier		Neutral		Support	
	Cases ($n = 17$)	Controls ($n = 17$)	Cases ($n = 17$)	Controls ($n = 17$)	Cases ($n = 17$)	Controls ($n = 17$)
Disability or health condition	93.3	82.4	6.7	17.6	0.0	0.0
Ethnic or racial background	12.5	17.6	87.5	82.4	0.0	0.0
Gender	0.0	0.0	100.0	100.0	0.0	0.0
Ability to use computers	18.8	41.2	56.3	29.4	25.0	29.4
Family's health problems	0.0	11.8	100.0	88.2	0.0	0.0
Availability of transportation	25.0	41.2	50.0	35.3	25.0	23.5
Type and amount of financial income from benefit payments	25.0	29.4	75.0	64.7	0.0	5.9
Motivational level	6.3	23.5	37.5	41.2	56.3	35.3
Energy level	33.3	23.5	33.3	41.2	33.3	35.3
Depression or emotional problems	31.3	23.5	68.8	76.5	0.0	0.0
Mental health	12.5	11.8	75.0	70.6	12.5	17.6
Employers' beliefs about ability of persons with disability performing work	43.8	52.9	56.3	41.2	0.0	5.9
Ability to have flexible work schedule	25.0	35.3	43.8	35.3	31.3	29.4
Availability of adaptive equipment	18.8	35.3	75.0	52.9	6.3	11.8
Prior work experiences	6.3	17.6	43.8	35.3	50.0	47.1
Level of training or education	25.0	41.2	37.5	29.4	37.5	29.4
Family responsibilities	12.5	29.4	87.5	70.6	0.0	0.0
Legal problems	18.8	17.6	81.3	82.4	0.0	0.0
Memory problems	12.5	11.8	87.5	88.2	0.0	0.0
Thinking problems	6.3	11.8	93.8	82.4	0.0	5.9
Speech problems	0.0	5.9	100.0	88.2	0.0	5.9
Ability to interact with others	6.3	5.9	50.0	52.9	43.8	41.2
Reading and writing problems	18.8	35.3	68.8	58.8	12.5	5.9
Vision problems	6.3	11.8	93.8	82.4	0.0	5.9
Hearing problems	6.3	17.6	93.8	76.5	0.0	5.9

Note. Percentages sum to 100% across each group. No statistically significant differences were found between case and control participants at $P < .05$.

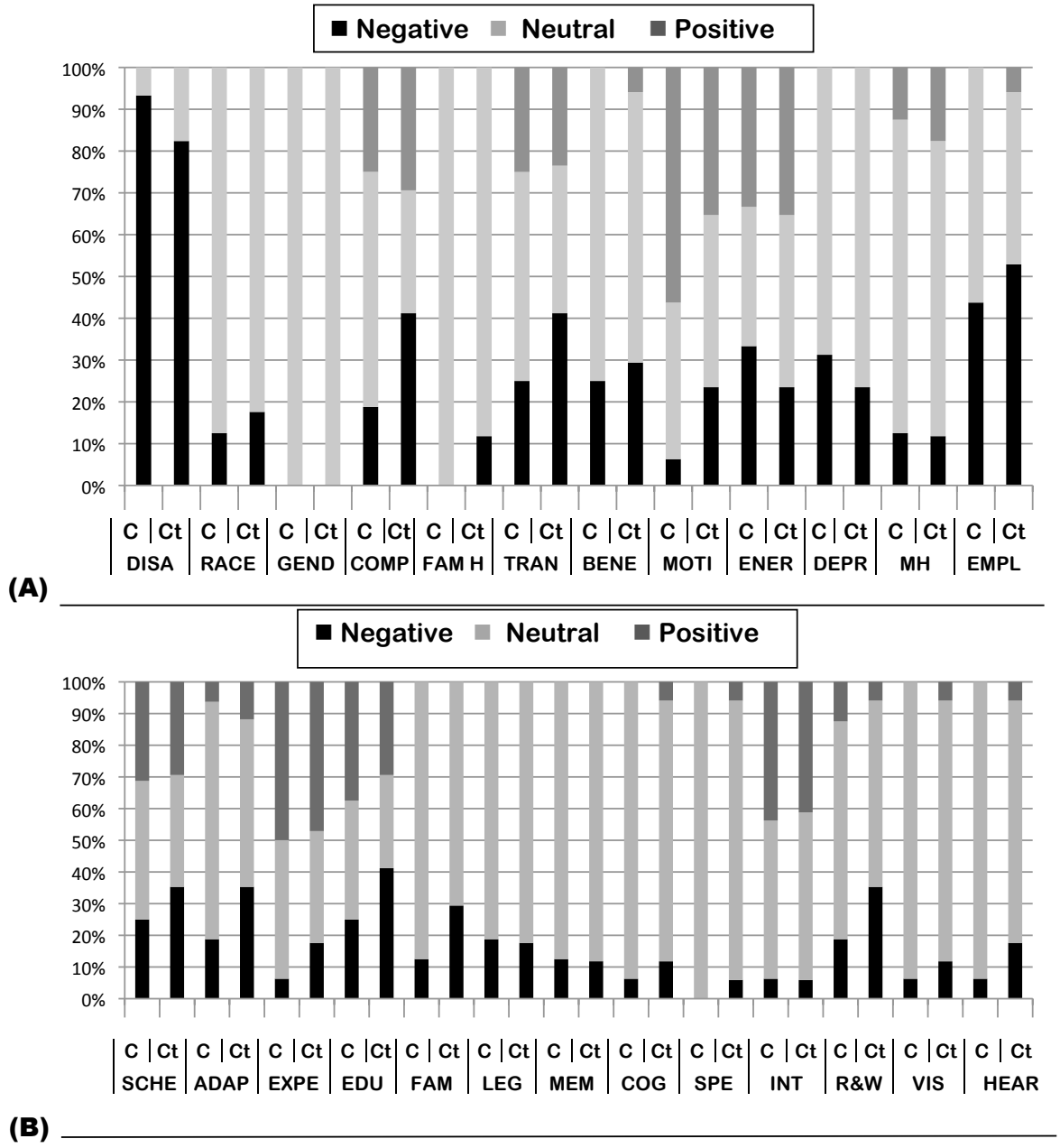

Figure 1. Responses of cases (C) and controls (Ct) to the barriers and supports questionnaire. **A**: DISA = disability or health condition; RACE = ethnic or racial background; GEND =gender; COMP = ability to use computers; FAM H = family's health problems; TRAN= availability of transportation; BENE = type and amount of financial income from benefit payments; MOTI = motivational level; ENER = energy level; DEPR = depression or emotional problems; MH = mental health; EMPL = employers' beliefs about ability of persons with disability performing work. **B**: SCHE = ability to have flexible work schedule; ADAP = availability of adaptive equipment; EXPE = prior work experiences; EDU= level of training or education; FAM = family responsibilities; LEG = legal problems; MEM = memory problems; COG= thinking problems; SPE = speech problems; INT= ability to interact with others; R&W = reading and writing problems; VIS = vision problems; HEAR = hearing problems.

public transit and others. A Veteran stated that the biggest obstacle to finding a job was his wheelchair, "Because that's the only transportation I've got." The lack of transportation options was a barrier to finding and maintaining a job.

Case and control participants described barriers that were not experienced by their matched cohort. Case Veterans identified accessibility issues at home, in the community, and at a potential work site as barriers to employment. These participants did not have enough free time to search for employment because of other commitments, such as higher education or physical therapy. They expressed a main facilitator to employment as having individualized support from their VRS; however, the number of Veterans on the VRS's caseload was cited as a barrier.

In addition to transportation, control Veterans identified 4 barriers to finding employment. Physical health was the most common barrier identified. Second, they expressed a fear of losing financial benefits. Veterans with SCI may receive Social Security Insurance (SSI), Social Security Disability Insurance (SSDI), or other private disability insurance. Control participants were afraid that financial benefits may be decreased or "lost" completely once they became employed. Another barrier that emerged was the time it took to find a job. Control participants noted that it was a slow process; they had not found employment within 12 months of the program. They suggested that having pre-selected jobs set aside for them would facilitate employment, rather than the EBSE approach of using an individualized job search strategy to find CE in the community. The final barrier indicated by controls was time constraints due to reliance on caregiver's schedules. They felt limited in the number of hours they could work. Even when caregivers were family members who were living with them, the Veterans' flexibility and availability to work was limited by the caregivers' schedule.

Discussion

The results of this study highlight the importance of mixed methods to identifying facilitators and barriers to employment. There were no statistically significant differences between case and control participants on baseline measures, but trends emerged. The qualitative interview data found no differences between cases and controls for perceived facilitators to employment, but differences emerged for perceived barriers. In this section, we compare the quantitative and qualitative findings with what is known in the literature.

Mixed-methods view of facilitators to employment

Two facilitators to employment were found to have a positive association with employment. Although not statistically significant at baseline, these facilitators warrant further exploration. The SWLS found that case Veterans on average had a higher score than controls, suggesting that higher satisfaction with life at the beginning of the job search may facilitate obtainment of employment. In a retrospective study from 1989 to 1994, quality of life correlated with working.[20] The FIM motor subscale scores also found a trend toward statistical significance, with case scores higher than controls. Although our sample is cross-sectional as it relates to time since injury, another study found that higher total FIM scores are a predictor of employment 1 year after SCI.[21] FIM scores alone are not an appropriate predictor of employment, because factors such as motivation and finances can influence the score.[22] Although not statistically significant, our cases reported higher motivational levels and less dependence on benefits, which were also reflected in the qualitative findings; this affirms the potential predictive value of FIM motor subscale scores within this sample.

Case and control findings from the interview data were consistent in showing that individualized employment services provided by a VRS and the VRS working with clinical and other vocational staff were facilitators to obtaining employment. In the EBSE model, the VRS implements 8 main principles,[23] one of which is integration of rehabilitation and health care. This principle promotes integrated vocational and health care through the VRS working with the clinical treatment members to address health issues during the employment process. This is critical for Veterans with SCI. Physical health issues were cited as a barrier by both the cases and

controls on the measures and for controls in the interview data; this is also found consistently in the literature.[2,9,24-29]

Mixed-methods view of barriers to employment

Although there were no statistically significant results for barriers on baseline measures, trends were supported by qualitative interview data. A main barrier found in the qualitative interview data for both cases and controls was the lack of transportation. Nearly half of the controls reported this as a barrier on the quantitative measure. The lack of transportation as a barrier to employment is consistent with other research.[2,3,28,29]

Between-group differences were mostly found in the perceived barriers in the qualitative data. The loss of financial benefits was a perceived barrier to employment for controls but not cases. Veteran VA and Social Security data revealed that more controls received VA benefits than cases. The negative impact of employment on disability benefits is a barrier cited in reviews of literature.[2,3,28,29]

A barrier identified in qualitative interview data by controls was the slow process of finding a job. In the barriers and supports questionnaire, cases indicated their level of motivation as a facilitator more than controls; conversely, more control Veterans indicated level of motivation as a barrier than cases. This finding is consistent with a qualitative study[24] of 12 men with SCI; 6 employed matched with 6 unemployed on age, education, race, gender, injury severity, and time since injury found that the employed men had more motivation to search for employment.

Controls but not cases perceived the lack of caregiver support as a barrier to employment in the qualitative interviews. One study[30] found that the majority of Veterans with SCI employed within the first 12 months of participation in an EBSE program received care and assistance at home. In this study, marital status did not serve in the predictive manner for employment that it has in other studies.[4]

Limitations

The small sample size of nested, matched Veterans with SCI may have limited the ability of this study to detect significant differences. A larger sample would increase generalizability and power to detect statistically significant differences. Additionally, all the data were self-reported and prone to the biases associated with self-report measures. Triangulation of findings from 2 data sources to validate responses addresses some of those biases.[19]

Conclusion

This study examined the association among facilitators and barriers and the outcome of employment for Veterans with SCI participating in an EBSE program using both quantitative and qualitative data. Qualitative data describing the Veterans' experience of participating in 12 months of EBSE illustrated how the integration of the VRS on the medical team was helpful for addressing health issues and the VRS, along with other vocational services, addressed practical matters, such as transportation and accessibility issues, to facilitate employment outcomes. Identified barriers to employment may be addressed through implementation of standardized approaches such as EBSE, but further research is needed to examine how implementing vocational programs can effectively target employment barriers within the context of SCI rehabilitation.

Acknowledgments

Conflicts of interest and financial support/ disclosures: No commercial party having a direct financial interest in the results of the research supporting this article has conferred or will confer a benefit on the authors or on any organization with which the authors are associated.

This material is based on work supported by the Department of Veterans Affairs, VHA, Office of Research and Development, Rehabilitation Research and Development Service and a VHA Rehabilitation Research and Development Grant (RR&D O7814-R). The contents of this article

do not represent the views of the Department of Veterans Affairs or the US Government.

Clinical Trial Registration number: NCT00117806 (SCI-VIP).

Ethics and reporting requirements: The trial was approved by the Institutional Review Board of the Research and Development Committee of the James A. Haley Veterans' Hospital, and each participating study site obtained approval from its respective IRB.

REFERENCES

1. Bergmark L, Westgren N, Asaba E. Returning to work after spinal cord injury: Exploring young adults' early expectations and experience. *Disabil Rehabil*. 2011:1-6.
2. Jongbloed L, Backman C, Forwell SJ, Carpenter C. Employment after spinal cord injury: The impact of government policies in Canada. *Work Read Mass*. 2007;29(2):145-154.
3. Ottomanelli L, Lind L. Review of critical factors related to employment after spinal cord injury: Implications for research and vocational services. *J Spinal Cord Med*. 2009;32(5):503-531.
4. Fiedler IG, Indermuehle DL, Drobac W, Laud P. Perceived barriers to employment in individuals with spinal cord injury. *Top Spinal Cord Inj Rehabil*. 2002;7(3):73-82.
5. DeVivo MJ, Richards JS. Community reintegration and quality of life following spinal cord injury. *Paraplegia*. 1992;30(2):108-112.
6. Bond GR. Supported employment: Evidence for an evidence-based practice. *Psychiatr Rehabil J*. 2004;27(4):345-359.
7. Ottomanelli L, Goetz LL, Suris A, et al. Effectiveness of supported employment for veterans with spinal cord injuries: Results from a randomized multisite study. *Arch Phys Med Rehabil*. 2012;93(5):740-747.
8. Krause JS. Employment after spinal cord injury. *Arch Phys Med Rehabil*. 1992;73(2):163-169.
9. Ottomanelli L, Bradshaw LD, Cipher D. Employment and vocational rehabilitation service use among veterans with spinal cord injury. *J Vocat Rehabil*. 2009;31(1):39-43.
10. Pavot W, Diener E. Review of the Satisfaction With Life Scale. *Psychol Assess*. 1993;5(2):164-172.
11. Whiteneck GG, Charlifue SW, Gerhart KA, Overholser JD, Richardson GN. Quantifying handicap: A new measure of long-term rehabilitation outcomes. *Arch Phys Med Rehabil*. 1992;73(6):519-526.
12. Hall K, Dijkers M, Whiteneck G, Brooks C, Krause J. The Craig Handicap Assessment and Reporting Technique (CHART): Metric properties and scoring. *Top Spinal Cord Inj Rehabil*. 1998;4(1):16-30.
13. Linacre JM, Heinemann AW, Wright BD, Granger CV, Hamilton BB. The structure and stability of the Functional Independence Measure. *Arch Phys Med Rehabil*. 1994;75(2):127-132.
14. Hamilton BB, Laughlin JA, Fiedler RC, Granger CV. Interrater reliability of the 7-level Functional Independence Measure (FIM). *Scand J Rehabil Med*. 1994;26(3):115-119.
15. Missinou MA, Olola CHO, Issifou S, et al. Short report: Piloting paperless data entry for clinical research in Africa. *Am J Trop Med Hyg*. 2005;72(3):301-303.
16. Glaser BG, Strauss AL. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Publishing; 1967.
17. Lincoln YS, Guba EG. *Naturalistic Inquiry*. Beverly Hills, CA: Sage Publications; 1985.
18. Huberman AM, Miles MB, eds. *The Qualitative Researcher's Companion*. Thousand Oaks, CA: Sage; 2002.
19. Bogdan RC, Biklen SK. *Qualitative Research in Education: An Introduction to Theory and Methods*. Columbus, OH: Allyn & Bacon; 2006.
20. Franceschini M, Di Clemente B, Rampello A, Nora M, Spizzichino L. Longitudinal outcome 6 years after spinal cord injury. *Spinal Cord*. 2003;41(5):280-285.
21. Murphy GC, Middleton J, Quirk R, De Wolf A, Cameron ID. Prediction of employment status one year post-discharge from rehabilitation following traumatic spinal cord injury: An exploratory analysis of participation and environmental variables. *J Rehabil Med*. 2009;41(13):1074-1079.
22. Akmal M, Trivedi R, Sutcliffe J. Functional outcome in trauma patients with spinal injury. *Spine*. 2003;28(2):180-185.
23. Drake RE, Bond GR, Becker DR. *Individual Placement and Support: An Evidence-Based Approach to Supported Employment*. New York: Oxford University Press; 2012.
24. Chapin MH, Kewman DG. Factors affecting employment following spinal cord injury: A qualitative study. *Rehabil Psychol*. 2001;46(4):400-416.
25. Hess DW, Ripley DL, McKinley WO, Tewksbury M. Predictors for return to work after spinal cord injury: A 3-year multicenter analysis. *Arch Phys Med Rehabil*. 2000;81(3):359-363.
26. Krause JS, Pickelsimer E. Relationship of perceived barriers to employment and return to work five years later: A pilot study among 343 participants with spinal cord injury. *Rehabil Couns Bull*. 2008;51(2):118-121.
27. Krause JS, Sternberg M, Maides J, Lottes S. Employment after spinal cord injury: Differences related to geographic region, gender, and race. *Arch Phys Med Rehabil*. 1998;79(6):615-624.

28. Lidal IB, Huynh TK, Biering-Sørensen F. Return to work following spinal cord injury: A review. *Disabil Rehabil*. 2007;29(17):1341-1375.
29. Wehman P, Wilson K, Parent W, Sherron-Targett P, McKinley W. Employment satisfaction of individuals with spinal cord injury. *Am J Phys Med Rehabil*. 2000;79(2):161-169.
30. Cotner BA, Keleher J, O'Connor DR, Trainor JK, Ottomanelli L. The role of social networks for Veterans with spinal cord injury in obtaining employment. *Ann Anthropol Pract*. 2014;37(2 [special issue]).